

1 WHAT IS CLAIMED IS:

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3 1. An aqueous dispersion for chemical mechanical
4 polishing comprising abrasive grains, wherein the
5 abrasive grains include:

6 (A) simple particles composed of at least one
7 selected from inorganic particles and organic particles,
8 and

9 (B) composite particles.

1 2. The aqueous dispersion for chemical mechanical
2 polishing according to claim 1, wherein the simple
3 particles (A) making up the abrasive grains are
4 composed of inorganic particles, and the composite
5 particles (B) are composed of inorganic organic
6 composite particles obtained by integrally combining
7 organic particles with inorganic particles.

1 3. The aqueous dispersion for chemical mechanical
2 polishing according to claim 1 or 2, wherein the
3 overall content of all the abrasive grains is 0.11 to
4 20 % by mass, the content of the simple particles (A)
5 is 0.1 to 19.99 % by mass, and the content of the
6 composite particles (B) is 0.01 to 19.9 % by mass.

1 4. The aqueous dispersion for chemical mechanical
2 polishing according to any one of claims 1 to 3,

3 wherein a value of a specific removal rate ratio
4 (RBM/RCu) represented by a ratio of the removal rate
5 (RBM) of a barrier metal film to the removal rate (RCu)
6 of a copper film in the case where the copper film and
7 barrier metal film are polished under the same
8 conditions is 0.5 to 200.

1 5. The aqueous dispersion for chemical mechanical
2 polishing according to any one of claims 1 to 3,
3 wherein the value of the specific removal rate ratio
4 (RBM/RCu) represented by a ratio of the removal rate
5 (RBM) of a barrier metal film to the removal rate (RCu)
6 of a copper film in the case where the copper film and
7 barrier metal film are polished under the same
8 conditions is 10 to 200.

1 6. The aqueous dispersion for chemical mechanical
2 polishing according to any one of claims 1 to 3,
3 wherein the value of the specific removal rate ratio
4 (RBM/RCu) represented by a ratio of the removal rate
5 (RBM) of a barrier metal film to the removal rate (RCu)
6 of a copper film in the case where the copper film and
7 barrier metal film are polished under the same
8 conditions is 0.5 to 3.

1 7. A process for producing a semiconductor device,
2 comprising the step of polishing a surface to be

3 polished of a semiconductor material with the aqueous
4 dispersion for chemical mechanical polishing according
5 to any one of claims 1 to 6.

1 8. A process for producing a semiconductor device,
2 comprising the first polishing treatment step of mainly
3 polishing a copper film of a surface to be polished of
4 a semiconductor material and the second polishing
5 treatment step of mainly polishing a barrier metal film
6 with the aqueous dispersion for chemical mechanical
7 polishing according to claim 5 or 6, conducted after
8 the first polishing treatment step.